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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/978,141	10/15/2001	Yaron Kretchmer	01-181/2161P	4084

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Sandeep Jaggi
LSI Logic Corporation
Intellectual Property Law Department
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Milpitas, CA 95035

EXAMINER

DIMYAN, MAGID Y

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/978,141

Applicant(s)

KRETCHMER ET AL.

Examiner

Magid Y Dimyan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 8-14 and 22-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) is/are allowed.
- 6) ☒ Claim(s) 1-7, 15-21 and 29 is/are rejected.
- 7) ☐ Claim(s) is/are objected to.
- 8) ☐ Claim(s) are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date .
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Acknowledgement

1. Receipt is acknowledged of the Response to Election/Restriction filed August 30, 2004, in response to the Office Action. It is also acknowledged that the Applicants have elected Group I (claims 1 - 7, 15 - 21 and 29) without traverse for prosecution of this application. *Applicants are requested to cancel the non-elected claims in the next communication.*

Claim Objections

2. Claim 15 is objected to because of the following informalities: in line 2, delete "automatically a method for". Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

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(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 29 is rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent No. 6,578,174 to Zizzo.

5. Referring to claim 29, Zizzo teaches a method and system for automating an ASIC design flow (see Abstract; Fig. 10; col. 1, lines 34 – 67) comprising the steps of: (a) providing a server over a network that integrates a set of design tools, including an automated front-end software process and an automated back-end software process (see Figs. 2 and 6; col. 4, line 50 – col. 5, line 9); (b) allowing the user to access the server over the network and enter the request for an ASIC design (see Figs. 1 and 6; col. 12, line 41 to col. 14, line 45); (c) executing the front-end software to automatically generate a netlist for the design from the user request (see col. 4, lines 11 – 49); and (d) executing the back-end software process to automatically generate a placement and route view of the ASIC (see col. 16, lines 15 – 19). Thus, Zizzo cites all the claimed elements.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 – 5, 7, 15 – 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zizzo in view of U.S. Patent No. 5,572,712 to Jamal.

8. Referring to claims 1 and 15, the teachings of Zizzo pertaining to the design of, and system for designing an integrated circuit (such as an ASIC or an SoC) over a network (internet) are cited in (5) above, and described in detail in his invention. As cited above, Zizzo discloses: (a) providing a server over the network that integrates a set of design tools including an automated front-end and back-end software process (see Zizzo - see Figs. 2 and 6; col. 4, line 50 – col. 5, line 9); (b) allowing the user to access the server to enter a request for a design that includes memory (see Zizzo - see col. 4, lines 11 – 49; Fig. 7); and (c) executing the back-end software process to automatically generate a placement and route view for the design (see Zizzo - see col. 16, lines 15 – 19). However, Zizzo does not disclose the additional elements of providing a request for a memory design that includes BIST, generating the BIST from a user request, and generating a placement and route view of the BIST. On the other hand, Jamal discloses all these elements of generating a memory with BIST based on a user request (to be used in an ASIC design) in his invention. See Abstract; Figs. 2 – 6; col. 1, line 9 to col. 2, line 64). Jamal also cites how the

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BIST modules for a generated memory design can be automatically synthesized and instantiated and prepared for placement and routing as claimed (see Fig. 4). Since many of the present-day complex IC designs contain large memories with BIST (used to facilitate the testability of large memories and improve fault coverage of the designs), it would therefore be obvious to one having ordinary skill in the art at the time of the invention to combine the teachings of Zizzo and Jamal to achieve the claimed inventions.

9. As for claims 2 and 16, see Zizzo Fig. 2, which shows the step of allowing the user to access the server over the internet as claimed.

10. As per claims 3 and 17, see (5) above, as well as Jamal – (Appendices A and B) which show the template (i.e., script) for allowing a user to enter a request for generating a memory as claimed.

11. As per claims 4 and 18, see Jamal - Figs. 6, 6b; col. 7, lines 45 – 62 which recite how a memory with certain capacity (words and bits) can be requested and generated, as claimed.

12. Referring to claims 5 and 19, see Jamal – Fig. 4; Appendices A – J which teach how the command lines from an input script file can be used with the appropriate software design tool.

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13. As per claims 7 and 21, see Jamal – Fig. 6a that shows the RAMBIST generated for the requested RAM, as claimed.

14. Claims 6 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zizzo in view of Jamal and further in view of U.S. Patent No. 6,493,855 to Weiss et al. (hereinafter, “Weiss”).

15. The teachings of Zizzo and Jamal pertaining to a method and system for automatically instantiating BIST modules in memory designs over the Internet are cited above, and described in more details in their disclosures. However, neither Zizzo nor Jamal teach using an iterative algorithm to: (a) generating an initial size estimate of a memory area; (b) allocating a memory having an area of that size; (c) performing place and route; and (d) assessing whether the allocated area is sufficient, and iteratively incrementing the memory size if it is not. On the other hand, Weiss disclose a flexible memory architecture that provides flexibility in how a memory may be organized within an IC in order to minimize the “white space” in a design (see col. 3, line 53 to col. 4, line 31; col. 6, lines 35 – 65; Figs. 3 - 5). This of course is performed iteratively. Thus, Weiss's invention can be combined with the Zizzo and Jamal inventions to obtain the same elements of these claims pertaining to iteratively incrementing the memory size depending on available space. Since, as stated by Weiss (col. 4, lines 14 – 21) it would be very desirable to minimize the amount of “white space” in an IC layout in order to minimize unused surface area, it would therefore be obvious to a person having

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ordinary skill in the art at the time of the invention to combine all three teachings to achieve the same claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magid Y Dimyan whose telephone number is (571) 272-1889. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Magid Y Dimyan
Examiner

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27 September 2004

MYD


VUTHE SIEK
PRIMARY EXAMINER